

Method and Apparatus for Material Deposition

ABSTRACT OF THE DISCLOSURE

Broadly speaking, a method and an apparatus are provided for depositing a material
5 on a semiconductor wafer ("wafer"). More specifically, the method and apparatus provide
for selective heating of a surface of the wafer exposed to an electroless plating solution.
The selective heating is provided by applying radiant energy to the wafer surface. The
selective heating of the wafer surface causes a temperature increase at an interface between
the wafer surface and the electroless plating solution. The temperature increase at the
10 interface in turn causes a plating reaction to occur at the wafer surface. Thus, material is
deposited on the wafer surface through an electroless plating reaction that is initiated and
controlled by varying the temperature of the wafer surface using an appropriately defined
radiant energy source.